

The invention relates to a gas burner or gas injector having a diffuser, which by control actuations can be modified within wide limits as a free jet burner and is suitable in particular for industrial furnaces with regenerative air preheating, in particular those which have an air supply arranged separately from the fuel gas. The gas injector according to the invention has a gas supply pipe 1 and a mouth 2, wherein the connection thereof forms a long diffuser 3 with a free jet opening angle, and is characterised in that the ratio of the diameter of the mouth 2 and the diameter of the gas supply pipe 1 is smaller than three. Preferably a central nozzle pipe 4 with a mouth 8 forming a free jet opening angle is arranged within the gas supply pipe 1, forming an annular gap 9 for guiding a partial gas flow between the gas supply pipe 1 and the central nozzle pipe 4, in such a way that the notional prolongation of the generatrix 7 of the central nozzle pipe mouth 8 goes into the generatrix of the long diffuser 3. A closure and regulating device is provided for regulating the partial flows.